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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

POLK, SHARON A

ART UNIT

PAPER NUMBER

2836

DATE MAILED: 05/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,955

Applicant(s)

GIANOPOULOS ET AL. ✓

Examiner

Sharon Polk

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed March 21, 2003 have been fully considered but they are not persuasive. It was argued with respect to claim 1, that *Russell* teaches an electrical isolation that prevents transfer of electric energy across the core. However, Applicant admits that *Russell* teaches transfer of electric power. However, power as defined is the **energy** dissipated in an electrical or electronic circuit or components that is conducting either ac or dc. (emphasis added). See *Modern Dictionary of Electronics*, Seventh Edition, page 581. Thus if power is transferred, energy is also transferred.

It was argued with regard to claims 5, 16, and 17 that *Jaeger* does not teach transfer from of a first magnetic energy and first electric energy across an interface via first and second conductors. This argument is traversed. *Jaeger* teaches two toroidal transformers (2:4), which are common to a loop (2:3). When voltage is applied to conductors (14, 16) the toroid not only transfers electric energy (for reasons discussed above relating to *Russell*), but it also transfers minimal magnetic energy via interface (30) to conductors (24, 26). Therefore, *Jaeger* meets the limitations of the claims. With regard to the terms "magnet", "capacitor", or "capacitively" not mentioned or discussed in *Jaeger*. They too are not found in the claim 5.

With regard to the independent claims that are dependent upon claims 1 and 5, the examiner notes that they were not specifically addressed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Russell, US 5,422,519.

Russell teaches a dual energy coupling device (fig. 4), comprising:

- a first electric conductor; and
- a second electric conductor,

wherein said first electric conductor is operable to simultaneously transfer a magnetic energy and an electric energy across an interface to said second electric conductor in response to a reception of an alternating electric signal (abstract, 5:59-65, and 6:1-5).

Claims 5-9, are rejected under 35 U.S.C. 102(b) as being anticipated by Jaeger, US 3,742,408.

Regarding **claim 5**, Jaeger teaches:

A dual energy coupling device, comprising:

- a first power source (10) operable to provide a first electric signal;

a first electric conductor (14) in electrical communication with said first power source to thereby receive the first electric signal when said first power source is providing the first electric signal; and

a second electric conductor (24),

wherein said first electric conductor is operable to simultaneously transfer a first magnetic energy and a first electric energy across an interface to said second electric conductor in response to a reception of the first electric signal.

With regard to **claim 6**, Jaeger teaches a load (20) in electrical communication with said second electric conductor (24),

wherein a current drive signal flows through said second electric conductor and said load in response to a reception of said first magnetic energy by said second electric conductor.

With regard to claims 7 and 8, adding limitations of a second power source, third and fourth electrical conductors, and a second load; Jaeger teaches an inductively coupled connector wherein a plurality of sources and loads may be interconnected using the concept as recited in claim 5 (e.g., 1:58-61, figs. 1 & 8).

With regard to **claim 9**, Jaeger teaches a third power source operable to provide a current control signal; and

a load operable to be in electrical communication with said third power source in response to a reception of said first electric energy by said second electric conductor and a reception of said second electric energy by said fourth electric conductor to

thereby receive the current control signal when said third power source is providing the current control signal (e.g., fig. 8, and 3:45-54, 4:1-8).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Russell in view of Inoh et al., US 5,51,573.

Russell lacks the teaching of said first electric conductor has a first spiral configuration and said second electric conductor has a second spiral configuration. However, Inoh et al. teach these features (7:5-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell with the teachings of Inoh et. for the purpose of providing an improved magnetic coupling, low loss, and high frequency characteristics when used as a transformer (2:55-58).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Russell in view of Esser et al., US 5,814,900.

Russell lacks the teaching of said first electric conductor and said second electric conductors are symmetrical relative to the interface. However, Esser et al. teach this feature (fig. 8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell with the teachings of Esser et al. for the purpose of providing a device for transmitting electrical energy with which simultaneously changing (control) signals may be transmitted between components that are adjustable, i.e., rotatable, displaceable, slidable or movable, relative to one another (1:61-66).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Russell and Ohno et al., US 6,087,694.

Russell lacks the teaching of a first substrate including a first corrugated surface having said first electric conductor formed thereon; and a second substrate including a second corrugated surface having said second electric conductor formed thereon.

Ohno et al. teach first and second conductors, and the corrugation process on a substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell with the teachings of Ohno et al. for the purpose of increasing or improving the surface area of the semiconductor device (2:61-62).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger in view of Inoh et al..

Jaeger lacks the teaching of said first electric conductor has a first spiral configuration and said second electric conductor has a second spiral configuration. However, Inoh et al. teach these features (7:5-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaeger with the teachings of Inoh et al. for the purpose of providing an improved magnetic coupling, low loss, and high frequency characteristics when used as a transformer (2:55-58).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jeager in view of Esser et al., US 5,814,900.

Jaeger lacks the teaching of said first electric conductor and said second electric conductors are symmetrical relative to the interface. However, Esser et al. teach this feature (fig. 8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaeger with the teachings of Esser et al. for the purpose of providing

a device for transmitting electrical energy with which simultaneously changing (control) signals may be transmitted between components that are adjustable, i.e., rotatable, displaceable, slidable or movable, relative to one another (1: 61-66).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger in view of Ohno et al..

Jaeger lacks the teaching of a first substrate including a first corrugated surface having said first electric conductor formed thereon; and a second substrate including a second corrugated surface having said second electric conductor formed thereon.

Ohno et al. Teach first and second conductors, and the corrugation process on a substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaeger with the teachings of Ohno et al. for the purpose of increasing or improving the surface area of the semiconductor device (2:61-62).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger in view of Brown, US 4,893,332.

With regard to claim 16, Jaeger teaches:

a power source (10) operable to provide a first electric signal;

a first load (20);

means for inductively coupling said first power source and said first load when said first power source is providing the first electric signal (e.g., fig. 1, 30);

a second power source operable to provide a second electrical signal (3:47-50);

a second load (3:47-50);

means for inductively coupling said second power source and said second load when said second power source is providing the second electric signal (e.g., fig. 1, 30, 3:47-50);

a third load (fig. 8).

Jaeger lacks the express teaching of a means for capacitively coupling said power source and said third load when said first power source and said first load are inductively coupled and when said second power source and said second load are inductively coupled. However, Brown teaches capacitive coupling (2:26-37). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaeger with the teachings of Brown for the purpose of blocking any DC component on the line (2:29-30).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger in view of Brown.

With regard to claim 17, Jaeger teaches a dual energy coupling device comprising

A first power source (10) operable to provide a first electric signal;

a second power source (fig. 8) operable to provide a second electric signal;

a third power source (fig. 8);

a load (20).

Jaeger lacks the express teaching of a means for capacitively coupling said power source and said third load when said first power source and said first load are inductively coupled and when said second power source and said second load are inductively coupled. However, Brown teaches capacitive coupling (2:26-37). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaeger with the teachings of Brown for the purpose of blocking any DC component on the line (2:29-30).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Communication with the PTO

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon Polk whose telephone number is 703-308-6257. The examiner can normally be reached on M-F 7-3:30.

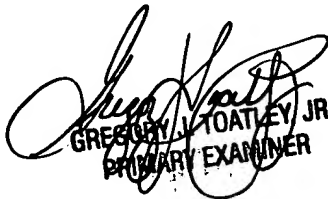
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 703-308-3119. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

May 21, 2003

Sharon Polk

Patent Examiner – Art Unit 2836


GREGORY J. TOATLEY JR.
PRIMARY EXAMINER